WHAT IS CLAIMED IS:

1. A pedometer for detecting vibrations in a direction of motion, comprising:

a main body (10);

a printed circuit board (20) incorporating a counting circuit (30) and being installed inside the main body (10);

a counting circuit (30) being formed by a signal amplifier (31), a signal detection circuit (32), and a processor (33);

a vibration detector (11) being installed on the printed circuit board (20) and connected to the counting circuit (30), wherein a sensing pad (110) of the vibration detector (11) is disposed orthogonal to the direction of motion to sense any body vibration in the direction of motion;

a display unit (12) being installed on the printed circuit board (20) and connected to the counting circuit (30) for displaying a pace count value;

where the above vibration detector (11) is disposed orthogonal to the direction of motion and operates in conjunction with the counting circuit (30) on the printed circuit board (20) to detect any body vibration in the direction of motion.

2. The pedometer as claimed in claim 1, wherein the vibration detector (11) comprises a ceramic piezoelectric element.

3. The pedometer as claimed in claim 1, wherein the counting circuit (30) includes:

a signal amplifier circuit (31) being connected to an output of the vibration detector (11) to obtain an output signal from the vibration detector (11)

after proper signal filtering and amplification;

a signal detection circuit (32) being connected to an output of the signal amplifier circuit (31) to compare the vibration detection signals and then output a pulse signal; and

a processor (33) being connected to an output of a comparator having variable reference voltage (323) in the signal detection circuit (32).

4. The pedometer as claimed in claim 3, wherein the signal detection circuit (32) is formed by a low-pass filter (321), a voltage divider (322) and a signal comparator (323), wherein the voltage divider (322) and the low-pass filter (321) are both connected to a positive input of the comparator having variable reference voltage (323) (reference voltage terminal).

5. The pedometer as claimed in claim 4, wherein the reference voltage terminal of the comparator (323) is connected to an output of the processor (33), wherein the processor (33) uses a pulse signal input to control the comparator (323), whereby the processor (33) outputs a signal with a pre-determined duration to reduce noises.

6. The pedometer as claimed in claim 3, wherein the voltage divider (322) is formed by two series connected resistors and a grounded capacitor.

7. The pedometer as claimed in claim 3, wherein the signal amplifier circuit (31) is formed by a filter (311) and a signal amplifier (312), such that the input of the filter (311) is connected to the vibration detector (11) and the output is connected to the signal amplifier (312).

8. The pedometer as claimed in claim 4, wherein the signal amplifier circuit (31) is formed by a filter (311) and a signal amplifier (312), such that the

input of filter (311) is connected to vibration detector (11) and the output is connected to the signal amplifier (312).

9. The pedometer as claimed in claim 5, wherein the signal amplifier circuit (31) is formed by a filter (311) and a signal amplifier (312), such that the input of filter (311) is connected to vibration detector (11) and the output is connected to the signal amplifier (312).

10. The pedometer as claimed in claim 6, wherein the signal amplifier circuit (31) is formed by a filter (311) and a signal amplifier (312), such that the input of filter (311) is connected to the vibration detector (11) and the output is connected to the signal amplifier (312).